



Anti inflammatory and
Analgesic activities of

VAHAIPOO
Albizzia lebbeck

&

Anti inflammatory and
Analgesic activities of

THISAIMUGA PARPAM

Dissertation Subject

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH II – GUNAPADAM

GOVERNMENT SIDDHA MEDICAL COLLEGE

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INTRODUCTION

In the New Millennium, everyone even medical legends started inclining towards the system which has a holistic approach. Our native medicine only suits and fits with perfect life style.

The Modern system of medicine cures diseases rapidly but always produces side effects.

According to Siddha theory, each and every living organism is made up of 96 thathuvas (The basic elements), any derangement in 96 thathuvas cause disease, various drugs made from herbal mineral and animal sources are used to cure these ailments.

But from the beginning of the present decade the siddha system of medicine gets a new shine as a yogical system .

Now-a-days the whole world is in a thirst to have an economical and effective therapy to rescue the people from the life threatening disease like AIDS. We need not to blow trumpet that, we are the people to do the rescue operation.

As a basic step in maintaining the grandeur of Siddha system of medicine and furnishing it, the author has analysed the drugs, which could cure “Azhal Keel Vayu” in medicinal literature of all, the author has selected “ Vahaipoo” and has given a detailed study of vahaippo, its speciality, its way of curing Azhal Keel vayu in her dissertation.

AIM AND OBJECTIVE

The aim of the present work is to study the effect of **Vahaipoo in the form of chooranam** for the treatment of **“Azhal Keel vayu”**

Vatha diseases like “Azhal keel vayu” are more common in old people. The modern system of medicine Analgesics and Anti inflammatory drugs are producing side effects such as gastric irritation, Nausea etc.

So the author has selected “Vahaipoo Chooranam” for its analgesic and anti inflammatory action in clinical trials and its bio – chemical, pharmacological aspects.

The results are mentioned in the following chapters with a view to elucidate various significant aspect of this drug on modern scientific basis, so that this medicine should be found as an use for human kind as a whole.

REVIEW OF LITERATURES

BOTANICAL ASPECTS OF ALBIZZIA LEBBECK

Botanical Name:

ALBIZZIA LEBBECK

Synonyms:

Mimosa flexuosaor

M.Sirissa

Classification (Bentham and Hooker):

Class	:	Dicotyledonae
Subclass	:	Polypetalae
Series	:	Calyciflorae
Order	:	Rosales
Family	:	Leguminosae
Sub family	:	Mimosoideae

Vernacular Name:

Tamil	:	Vagai
English	:	Sirissa
Ben	:	Sirish
Guj	:	Pilo sarosio
Hindi	:	Siris

Kan	:	Bagemara
Mal	:	Vaga
Mar	:	Chichola, Sirisha
Sans	:	Sirisha
Tel	:	Dirasana
Trade name :		Kokko

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Habitat:

A Large deciduous tree

Root:

Tap – Root, branched.

Leaf:

Compound, evenly bipinnate, petiole Long, about 12cm with a large gland at the base of petiole, glands also often present at the base of the upper pairs of pinnae, stipules minute, linear, caducous, pinnae 3-9 pairs; upto 2 -5 cm long.

Leaflets :

3-9 pairs, oblique, 2-5cm long ; sub sessile, sub coriaceous, upper surface green or mottled with white glabrous, under surface, lighter, downy.

Inflorescence :

Flowers in heads which are shortly stalked and arranged in axillary clusters of 2 – 4 forming short, terminal racemes or panicles, the central flower in each head is the largest.

Flower:

Bracteate, regular, complete, actinomorphic, bisexual, hypogynous, bracts linear, tomentose, caducous fragrant.

Calyx :

5 , gamosepalous, small, campanulate, pubescent, inferior.

Corolla:

5 gamopetalous, 5 lobed, greenish yellow pubescent.

Androecium :

Stamens numerous, united at the base, monodelphous, filaments 3- 5 cm, Long anthers minute, bithecous, dorsifixed, Inferior.

Gynoecium:

Monocarpellary, ovary superior, unilocular, ovules may be on the ventral suture, style slender, stigma capitate.

Fruit :

A pod, 7.30cm long , thin flat and straight opening along the ventral suture.

Seeds :

Sub – orbicular, oblong, brown very often found damaged by some insect in the closed pod.

Angiosperms – G.L. Chopra – 223 - 224

COLLECTIONS FROM LITERATURES

Constituents:

The flowers on steam distillation gave a colourless, sweet smelling, oil (4.3% having d_{30}^{30} , 1.103 and n_D^{30} , 1.5284 on fractionation . The oil yielded P – nitrobenzoate, benzyle alcohol, and benzoic acid, The residue gave lupeol, α and β amyryl and a pigment similar to crocetin.

Wealth of India - 126

Phytochemical DATA:

Sterols, Saponins, Tannins, gum, mucilage, Rosin, wax.

Flora of Coorg - 564

Medicinal Uses:

The plant is reported to have antiseptic. antidiarrhetic and anti tubercular properties. The bark has acrid taste.

It is recommended for bronchitis, Leprosy, Paralysis and helminth infections.

The bark and seeds are astringent, useful in piles and diarrhoea and act as tonic.

The root bark and root gum are used as dental powder for strengthening the gums.

Medicinal Plants in India - 38

GUNAPADAM ASPECTS

வாகை

வேறு பெயர்கள் :

சீரிடம், பாண்டில்

வளரியல்பு :

இது இமயத்தை சார்ந்த இடங்களிலும் , வங்காளம், மத்திய இந்தியா,
தென் இந்தியா முதலிய இடங்களிலும் பயிராகும் மரம்.

பயன் உறுப்பு :

இலை, பூ , பட்டை , வேர்ப்பட்டை , வித்து , பிசின்

சுவை :

கார்ப்பு , கைப்பு

தன்மை :

வெப்பம்

பிரிவு :

கார்ப்பு

செய்கை :

துவர்ப்பி - Astringent

குளிர்ச்சியுண்டாக்கி - Refrigerant

வாகை பூ:

வாகைப்பூ, வளிகுற்றத்தைத் தன்னிலைப்படுத்தும் , நஞ்சுகளைப் போக்கும் , ஐயப்பிணியை துலைத்துவிடும்.

“வாதசமனஞ் செய்யும் வல்விடத்தைப் போக்கிவிடும்
சீதசிலேத் மத்தைச் சிதைக்குங்காண் - போதவுள்ளே
மாகைப்பை வைத்திருக்கும் மாநிலத்தி லேபெரிய
வாகைப்பூத் தன்னை வழுத்து.”

வாகை மரம் :

குணம் :

பசியை உண்டாக்கும் , பாம்பு முதலிய நஞ்சுகள், அழல் புண்கள், வாதச்சொறி, சுரம் , நீர் வேட்கை , வாய்ப்புண் ஆகியவைகளைப் போக்கும்.

“வாகைகா ரங்கசப்பை வைத்திருக்கு முள்ளபடி
யோகையு றப்பசியை உண்டாக்கும். தோகையே !
தீரா விடத்தோடு சில்விடத்தை யுந்தீர்க்கும்
ஆராயத் தோன்று மது
வாகை யனல் விரணம் வாத வறட்சியுடன்
தாக சுரமுந் தணிக்குங்காண் - ஆகமதில்
அக்கர மெல்லா மகற்றிவிடும் பூவனமே
அக்கணத்தி லென்றே யறி.”

குணபாடம் மூலிகை வகுப்பு- 624

பயன்கள்:

- கட்டிகள் , வீக்கங்கள், தடிப்பு ஆகியவற்றின் மேல் பூக்களை அரைத்து பற்றிடலாம்
- பூவை அரைத்தாவது, குடிநீர் செய்தாவது கொடுத்தால், வளிநோய்களையும் , பாம்புக்கடிவையும் , ஐயப்பெருக்கையும் போக்கும்
- பூவை குடிநீரிட்டு குடிக்க சுவாசக் குழாய் நோய்கள் நீங்கும்.
- பூக்களில் தேன் திரவம் உள்ளது . வாகைத் தேன் சிறந்ததெனக் கருதப்படுகிறது.
- நீராவிமூலம் 4.3% அளவில் ஒரு நறுமணத் தைலம் வடித்து எடுக்கலாம். இந்த எண்ணெயிலிருந்து , நைட்ரோபென்ஸோயெட் (P – nitrobenzoate) .

மென்மை ஆல்கஹால் (benzyl alcohol) மற்றும் பென்ஸாயிக் அமிலம் ஆகியவற்றை பெறலாம். இவற்றை எடுத்தது போக எஞ்சும் பொருளிலிருந்து , லுபியாஸ், ஆல்பா மற்றும் பீடா - அமைரின் மற்றும் ஒரு சாயப் பொருள் ஆகியவற்றையும் பெறலாம்

- வளம் தரும் மரங்கள் - 243

ÀÊÏË,Û:

ÀÏ", ÁÄ"Ã "ÁÂ «"Ãð Ð °çÊçÐ |çö ÅçðîÏ ,Äð ã°çÉ;ð ,Äð¾çÉ;ð §¾;ÿÊçÂ «Ï,ç §ç;ö ¾½çðÏ.

ÀÏ", ÁÄ÷,ççÿ íÃ...ð¾çð |Åû"ç Áçç",ð ÀÄó"È À;Å"É |°ð ãÏ,çÄçî Òó¾; ,×ð, ,ñ,ççð þî Ò"ÁÂ; ,×ð, -ð| ,;ûð Òó¾; ,×ð, ,ñ,ççð þî Ò"ÁÂ; ,×ð, -ð| ,;ûð Òó¾; ,×ð ÀÿÀîð¾çÉ;ð À;ðð Åç,,ð çéÏÏ.

ÀÏ", ÁÄ÷, §Å÷, Äð"¼, Åç"¼ -,çÄÅü"È §°÷ðð ,,,î Ò ,;ðî°ç «¾çð ¾çñ,î,ðàðð, þððððð, §¾þð ,Äð -ð| ,;ûçî |°¾;ð À;ðð Ó¾ÄçÄüÊçÿ çîÏ çéÏÏ.

Àï°çñ× ,çð¾ð:

$\mathbb{P} \ni \pm \partial \ddot{A}_i \quad \ddot{A}_i \text{ „} \dot{1}, \text{“} \zeta \hat{O} \ddot{O} \quad \text{“} , , , i \partial , \quad \ddot{A} \ddot{A}_i , \quad \text{„} \hat{A} \ddot{O} , \quad \text{“} \hat{A} \partial \frac{3}{4} \zeta \hat{A} \ddot{O} ,$
 $\S^\circ i \text{“} , , \quad \hat{Y} \hat{A} \ddot{O} , \quad , \zeta \ddot{O} \hat{A}_i \zeta \quad \S_{\zeta i} \ddot{O} , \quad \hat{A} \hat{n} \frac{1}{2} \varepsilon \hat{A} \partial \quad \hat{A} \varepsilon \hat{1} , \ddot{O} , \quad \circ \ddot{O} \hat{S} \frac{3}{4} \ddot{O} \hat{A} \quad \hat{A}_i \frac{3}{4} \ddot{O} ,$
 $, i \hat{A}_i \text{“} \hat{A} , \quad \frac{3}{4} i \text{“} \frac{3}{4} \hat{O} \hat{A}_i \hat{E} \hat{O} \hat{O} \quad \hat{O} \frac{3}{4} \hat{A}_i \hat{A} \quad \S_{\zeta i} \ddot{O} , \text{“} \zeta \partial \quad \frac{3}{4} \frac{1}{2} \zeta \hat{1} \hat{1} \ddot{O} .$

$\circ \varepsilon \hat{A} \varepsilon \text{ „} , i \hat{n} \frac{3}{4} \ddot{O} :$

$\mathbb{P} \ni \pm \partial \ddot{A}_i \quad \ddot{A}_i \text{ „} \dot{1}, \text{“} \zeta \hat{O} \ddot{O} \quad \S \hat{A}_i \hat{1} \hat{1} \ddot{O} .$

$- \quad \ll \hat{1} \hat{E} \zeta \quad \S \hat{A}^\circ \hat{n} \hat{Y} \quad \circ \hat{A} , t \ddot{O} t \zeta \text{“} \frac{3}{4}$

MATERIALS AND METHODS

Drug Selection:

In this dissertation, flower of vahai was taken as single drug study and used in “ Azhal Keel Vayu”

Collection of Vahai poo:

The flower was collected from raw drug store at Town.

Purification of Vahaipoo:

Vahai poo was purified by removing unwanted particles.

Preparation of Vahaipoo chooranam:

The purified poo was made into fine powder form (Chooranam) Then it was filtered by white cloth (Vasthirakayam) and preserved.

Purification of chooranam:

A clay pot was taken and was filled with equal parts of milk and water. A cloth was tied around the mouth of the pot. The prepared chooranam was placed over the cloth and then it was covered with another clay pot . The gap was covered with another cloth. This was kept on the fire until the milk level considerably decreased. Then the chooranam was taken out and dried.

Route of Administration:

Enteral

Dosage :

One gram thrice a day with hot water after meals .

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BIO-CHEMICAL ANALYSIS OF VAHAI POO CHOORANAM

PREPARATION OF THE EXTRACT:

5gms of chooranam was weighed accurately and placed in a 250ml clean beaker. Then 50ml distilled water was added and dissolved well. Then it was boiled well for about 10 minutes. It was cooled and filtered in a 100ml volumetric flask and then it was made up to 100ml with distilled water. This fluid was taken for analysis.

QUALITATIVE ANALYSIS:

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	<u>TEST FOR CALCIUM</u> 2ml of the above prepared extract was taken in a clean test tube. To this 2 ml of 4% Ammonium oxalate solution was added.	No White precipitate was formed	Absence of Calcium
2.	<u>TEST FOR SULPHATE:</u> 2ml of the extract was added to 5% barium chloride solution.	A white precipitate was formed	Indicated the presence of Sulphate
3.	<u>TEST FOR CHLORIDE</u> The extract was treated with silver nitrate solution.	A white precipitate was formed	Indicated the presence of chloride
4.	<u>TEST FOR CARBONATE</u> The substance was treated with concentrated HCL.	No brisk effervescence was formed	Absence of carbonate

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
5.	<u>TEST FOR STARCH</u> The extract was added with weak iodine solution.	No blue colour was formed	Absence of starch
6.	<u>TEST FOR IRON-FERRIC</u> The extract was treated with Glacial acetic acid and potassium ferro cyanide.	No blue colour was formed	Absence of ferric Iron
7.	<u>TEST OF IRON</u> <u>FERROUS:</u> The extract was treated with concentrated nitric acid and ammonium thio cyanate	Blood red colour was formed	Indicated the presence of ferrous iron
8.	<u>TEST FOR PHOSPHATE</u> The extract was treated with ammonium molybdate and concentrated nitric acid	No yellow precipitate was formed	Absence of phosphate
9.	<u>TEST FOR ALBUMIN</u> The extract was treated with Esbach's reagent	No yellow precipitate was formed	Absence of Albumin
10.	<u>TEST FOR TANNIC ACID</u> The extract was treated with ferric chloride	No blue black precipitate was formed	Absence of Tannic acid

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
11.	<u>TEST FOR UNSATURATION</u> Potassium permanganate solution was added to the extract	It got decolourised	Indicated the presence of unsaturated compound
12.	<u>TEST FOR REDUCING SUGAR</u> 5ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for 2mts and added 8 – 10 drops of the extract and again boiled it for 2 mts	Colour change occurred	Indicated the presence of Reducing sugar
13.	<u>TEST FOR AMINO ACID:</u> One or two drops of the extract was placed on a filter paper and dried it well. After drying, 1% ninhydrin was sprayed over the same and dried it well.	Violet colour was formed	Indicated the presence of Amino acid

PHARMACOLOGICAL STUDIES

ANALGESIC STUDY OF VAHAIPOO CHOORANAM

BY TAIL FLICK METHOD

Introduction :

According to Siddha Medicine the vahaipoo chooranam is indicated in vatha diseases. From this indication the drug vahaipoo chooranam might possess analgesic activity.

Aim:

To study the analgesic effect of vahaipoo chooranam on albino rats by tail flick method.

MATERIALS AND METHODS:

Preparation of the test Drug:

1gm of Vahaipoo chooranam was suspended in 10ml of hotwater as suspending agent. This 1ml contained 100mg of the test drug.

Equipment : Hotwater bath

Procedure:

Six male albino rats (weighing 80 – 100gms) were used in three groups. The animals were allowed free to access food and water until they brought for the experiment. The animals which showed the positive response to the stimulus within a given time were selected for the study.

After the selection of animals which were responding to stimulus within 2 seconds, they were divided into 3 groups, each group consisting of 2 rats.

The hot water was maintained at 55⁰C. The tip of the tail was immersed into the water bath and the time was noted when the rat flicked the tail.

First group was given the vahaipoo chooranam dose of 100mg/100gm body weight of the animal.

Second group was administered with paracetamol at a dose of 20mg / 100gm of body weight. Third group was given 1ml of water and kept as control.

After the drug administration, the reaction time of each rat after ½ an hour, 1 hour and 1 ½ hour were noted in each group. (When a rat fails to flick the tail , it should not be continued beyond 8 seconds to avoid injury) and the average was calculated.

The results of control group Standard group and drug treated group were tabulated and compared.

Study of Analgesic effect of using the drugs of - VAHAIPOO CHOORANAM

Serial No	Name of Drugs / Groups	Dose / 100 gram body weight	Initial Reading	After Drug Administration			Mean Difference	Remarks
				½ hr. Average	1 hr. Average	1 ½ hr. Average		
1.	Vahaipoo chooranam	100mg / 1ml	3.0 sec	3.0	3.5	4.0 sec	-	Mild Action
2.	Paracetamol	20mg/ml	3.0 sec	4.0	5.0	6.5sec	-	Good
3.	Water	1ml	2.5sec	2.5	2.5	2.5sec	-	No.

Inference: The test drug Vahaipoo Chooranam has **mild analgesic activity**.

ANIT INFLAMMATORY STUDIES

Acute Anti – inflammatory studies Carrageenin induced Hind paw oedema Method.

Introduction:

In Siddha texts, Vahaipoo chooranam is indicated in the condition of Vatha -disease. So the following pharmacological studies have been done.

Method:

Carrageenin induced Hindpaw oedema method in albino rats.

Aim:

To evaluate the acute anti-inflammatory effect of vahaipoo by carrageenin induced oedema method in albino rats.

Drug Preparation:

1gm of Vahaipoo chooranam was suspended in 10ml of hot water. Hot water was added for dissolving the test drug. This 1ml contained 100mg of the test drug.

Procedure:

Six healthy albino rats of either sex weighing between 80 -100gm were selected. The volume of each hind paw was measured by using the mercury plethysmograph.

After the measurement of hind paw of all the rats, they were divided into three groups, each groups containing two rats.

First group was given test drug vahaipoo chooranam at a dose of 100mg / 100gm body weight of the animal. The second group was given Ibu brufen 20mg / 100gm of body weight and the third group was kept as control by giving distilled water of 1ml / 100gm of body weight.

All the animals were given 0.1ml of 1% (w/v) of carrageenin / suspension which was injected subcutaneously in the plantar surface of hind paw of rats.

Three hours after carrageenin injection, the hind paw volume was measured, using mercury plethysmograph. From the differences in the initial and final hind paw volume; the degree of the inflammation was calculated by taking the volume in the untreated control group as 100%.

The percentage of inflammation of the other group was calculated from the degree of the anti-inflammatory effect of the treated and the test groups were calculated.

**Study of Acute Anti – Inflammatory by Carrageenin induced hind paw Oedema method
using Plethysmograph using the drug of Vahaipoo chooranam**

Serial No	Name of Drugs / Groups	Dose / 100gm body weight	Initial Reading average	Final reading average	Mean Difference	Percentage inflammation	Percentage inhibition	Remarks
1.	Vahaipoo Chooranam	100mg / 1ml	0.75	1.3	0.6	75.0	25.0	Mild Action
2.	Ibu Brufen	20mg/ml	0.8	0.85	0.05	6.25	93.75	Good
3.	Water	1ml	0.6	1.5	0.80	100.00	-	No.

Inference: The test drug Vahaipoo Chooranam has **mild acute anti-inflammatory activity**

CHRONIC ANTI – INFLAMMATORY EFFECT OF VAHAIPOO CHLOORANAM IN ALBINO RATS BY COTTON PELLETS GRANULOMA METHOD

Aim:

Chronic anti –inflammatory effects of vahaipoo chooranam.

Drug Preparation:

1gm of vahaipoo chooranam was suspended in 10ml of hot water. Hot water was added for dissolving the test drug.

Procedure:

Six healthy albino rats weighing 100 – 150 gms were taken and divided into three groups, each group consisting of two rats.

In this procedure the drug was given daily for 7 days. Before giving the drug cotton pellets each weighing 10mgm were prepared and sterilized in the autoclave for about one hour under 15 Hg atmospheric pressure.

On the day of experiment, each rat was anaesthetised with ether to implant 10 mgm of sterilized cotton pellets subcutaneously in the lower abdomen of two on each side after making suitable incision and sutured carefully.

The first group of animals were given the test drug, vahaipoo chooranam in a dose of 100mg / 100gm of body weight. The second group was given Ibu-brufen at a dose of 20mg /100gm body weight. The third group was kept as control group by giving distilled water of 1ml / 100gm of body weight. On the 8th day of the experiment, all the rats were sacrificed and cotton pellets surrounded by granulation tissues were removed and dried in hot air oven at 55⁰C - 60⁰C.

The concordant weight of granuloma for control group and treated group give an estimation of degree of inhibitory activity of test drug.

**Study of Chronic Anti - inflammatory effect by Cotton Pellet method using the Drugs of
Vahaipoo chooranam**

Serial No	Name of Drugs / Groups	Dose / 100 gram body weight	Pellet weight	Pellet weight of the Granuloma of drugs	Mean difference	Percentage inflammation	Percentage inhibition	Remarks
1.	Vahaipoo chooranam	100mg /1ml	10mg	165	-	66	34	Mild Action
2.	Ibu Brufen	20mg/ml	10mg	56mg	-	22.4	77.6	Good
3.	Water	1ml	10mg	250mg	-	100.0	-	No.

Inference : The test drug has got **Mild action**.

ANTI – PYRETIC ACTIVITY ON ALBINO RATS

BY

BEWER YEAST METHOD

Aim:

To study the anti – pyretic activity of Vahaipoo chooranam.

Procedure:

Six albino rats were selected each weighing about 100 – 150gm and divided into 3 groups, 2 rats in each group. All the rats were made hyperthermic by subcutaneous injection of 12% suspension of yeast at a dose of 1ml / 100gm of body weight. 10 hours later, the first group was given test drug orally at a dose of 100mg /100gm of body weight . Second group was given paracetamol 20mg /100gm of body weight. The third group was given distilled water orally at a dose of 1ml / 100 gm of body weight.

The mean rectal temperature for the 3 groups were recorded at 0 hour, 1.30 hours, 3 hours and 4.30 hours after the administration of drugs.

The difference between the mean temperature of the control group, the standard group and that of drug group was calculated and tabulated.

Study of Anti pyretic by yeast induced method using the drugs of Vahaipoo chooranam

Serial No.	Name of Drugs / Groups	Dose / 100 gram body weight	Initial Temperature in centigrade	After Drug Administration			Remarks	
				1 ½ hour	3.0 hour	4 ½ hour		
1.	Vahaipoo Chooranam (3 Rats Average)	100mg / 1ml	37.0 ⁰ C	37.0	36.5	35.5	Mode rate	-
2.	Paracetamol	20mg / 1ml	36.5 ⁰ C	35.5	35.0	34.0	Good	-
3.	Water	1ml	36.5 ⁰ C	36.5	37.5	38.5	No	-

Inference: The Test drug has got **moderate action**.

CLINICAL ASSESSMENT

Azhal keel vayu is a disease mainly affecting the major weight bearing joints . Normally this is change in the joints at certain age group.

It affects mainly the knee joints, which do a lot of functions like flexion, extension and rotation etc.

In order to assess the efficacy of the drug vahaipoo chooranam for Azhal Keel vayu it was tried clinically on 40 patients of both from the inpatient and out patient department of the Government Siddha Medical college hospital, Palayamkottai.

Patients above age 40 years were selected for clinical trial. Both sexes were selected from out patient and inpatient out of 40 cases 10 cases were inpatients and 30 were out patients.

Patients with the symptoms of pain, swelling, stiffness, difficulty in walking etc were selected.

Routine investigations were done mainly with radiological findings.

Criteria for case selection

- Pain
- Age above 40 years
- Swelling
- Measurement done
- Stiffness
- Limitation of movement
- Crepitation of the joints
- Routine investigations
- 'X' ray knee joint for both diagnosis and prognosis
- Signs and symptoms vary in its severity from patient to patient.

Excluding criteria

Sudden onset of excruciating pain, marked swelling and redness of the big toe

- Younger age group
- Migrating joint pain
- Evening raise of temperature, Loss of weight.
- Haemorrhagic effusion.

Line of Treatment

Vahaipoo chooranam was administered orally in a dose of 1gm thrice a day with water after meals for each case 20 – 40 days .

Routine investigations were done before and after treatment. Radiological investigation was also done before and after treatment. For IP patients, time was noted for walking to a distance of 100 feet, on admission and after treatment.

The duration of treatment varied according to the severity of signs and symptoms.

Medical Advice

- They were advised to avoid foods like tubers, dhal, curd etc. which would increase the vatha kuttram.
- Advised to take vegetables and easily digestible foods.
- Avoid cold damp climate.
- Obese patients were advised to reduce their weight in order to avoid stress
- Advised to take rest but prolonged immobilization should be avoided as it leads on the suffering of the point and further incapacitate the patient to walk.

Exercise for Strengthening Muscles around the knee joint

Simple exercise that promote flexibility and strengthen the muscles around the knee can go long way towards warding off problems. In many cases, these exercise can also help hasten recovery after a knee injury. Weak or tight muscles are an important cause of knee injuries.

Hence, it is advisable to make the time and effort to strengthen the muscles around the knee. However, if one is already suffering from pain in the knee, these exercise should be performed after consulting a doctor. To derive maximum benefit from the following exercise, they should be performed once or twice a day, repeating every exercise five to ten times for each knee.

Thigh Firmer:



Sit on the edge of a chair with one leg stretched out in front and the heel resting on the floor, tighten the muscle that runs across in front of the knee by flexing the toes back. Simultaneously, push the back of the knee

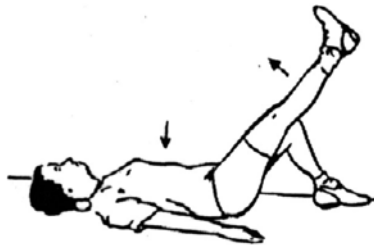
towards the floor and feel the stretch there as well as at the back of the ankle. Hold for 5 seconds. Repeat the same with the other leg.

Knee flexion and extension:



Sit straight on chair and bend the knee by pulling heel under the chair. Rest the foot on the toes. Hold for 5 seconds. Keep the foot relaxed and slowly raise it up to straighten the knee. Hold for 5 seconds and then slowly lower the foot to the floor. Repeat the same with the other leg.

Straight Leg lift:



Lie flat on the back with the stomach pulled in, the knee of one leg bent and the foot flat on the floor. Extend the other leg and lift it slowly as far as it is comfortably possible, without bending the knee. Hold for 5 seconds and slowly lower the leg. Repeat the same with the other leg.

Response:

Among the 40 patients

Good Response - 80%

Fair Response - 15%

Poor Response - 5 %

TABULATION SHOWING RESPONSE

Result	No.of.Case	Percentage
Complete relief	32	80
Partial relief	6	15
No relief	2	5
Total	40	100

DISCUSSION

The therapeutic efficacy of vahaipoo chooranam in the disease of Azhal Keel vayu related by exploring pharmacological action like anti – inflammatory, analgesic, through clinical trial.

From literatures information, the author has come to an ideas about vahaipoo chooranam and it efficacy of Azhal Keel Vayu.

In pharmacological studies this drug had mild analgesic, mild acute , chronic anti – inflammatory and moderate antipyretic action. It helps to relief of pain (Analgesic) and reduce the inflammation (anti – inflammatory) in soft tissues.

Biochemical analysis showed that the drug vahaipoo chooranam contains sulphate, chloride, ferrous iron, unsaturated compound, reducing sugar and amino acid.

In our clinical studies , no adverse reactions were reported during the administration of this drug.

About 40 patients with Azhal keel vayu were taken in this study.

Among them

Good response	–	80%
Fair response	–	15%
Poor response	–	5%

SUMMARY

The vahaipoo chooranam has been taken for study to establish its efficacy in Azhal Keel Vayu.

The pharmacological analysis established that the drug has got mild analgesic, mild acute, chronic anti inflammatory and moderate antipyretic activities.

Biochemical analysis of the drug has got sulphate, chloride, Ferrous iron, unsaturated compound, reducing sugar and aminoacid.

The main symptoms like pain, swelling and tenderness were taken. The drug was given to the patients for 15 – 40 days for the clinical assessment. It is inferred that the vahaipoo chooranam gave satisfactory results in treatment of Azhal Keel vayu during the clinical trial. The drug had no adverse reactions.

CONCLUSION

It is concluded that the drug Vahaipoo chooranam (Albizzia lebbeck) has got mild analgesic, mild acute, chronic anti – inflammatory action and moderate anti pyretic activities and clinically very effective drug in “Azhal keel vayu”.

INTRODUCTION

The siddha system of medicine has been in practice in our country since time unknown. Siddha is not considered to be merely a compendium of therapeutics based on herbal mineral and animal resources but it is claimed to be the philosophy of life and living.

From the beginning of the universe all living things get into the cycle of birth and death. In between this period they struggle for their existence of life.

Siddhars are who removed the sins and sorrows of human beings and they taught the way of well being .

The aim and intention of all the Siddhar's were not only to cure the disease but also to show the way of retaining the soul to reach the eternal power through various steps including Ashtanga yogam. In addition to the medicines, they have also dealt with various subjects such as astrology, philosophy, vedic principles etc

The foremost principles of our system of medicine is the 'Pancha Bootha Theory". It is said that this universe is composed of pancha bootha viz, mann, neer, thee, vayu and aagayam like wise our human body is also made up of these pancha boothas. They in combination with one another form the three vital humours vatham, pitham, kabam. Hence any alteration

in the panchaboothas causes the derangement in the mukkutram ending in a disease.

This disease was set right by siddhars through medicines derived from herbs, minerals, metals and even living organisms also.

AIM AND OBJECTIVE

The disease Azhal keel vayu produce tremendous pain, discomfort and more complications to the patients. The purpose of the author is to elucidate a good medicine from ancient siddha literatures and to create hope and faith in their treatments. This being a preliminary endeavor by the author, so that it would be a helping hand to the sufferers. With this view, this dissertation subject was undertaken.

1. To bring out the siddha literary evidence regarding the trial drug.
2. To have a clinical trial on Azhal keel vayu with Thisaimuga parpam.
3. To have a detailed clinical investigations.
4. To evaluate the Bio-chemical analysis of the trial drug.
5. To evaluate the pharmacological analysis of the trial drug.
6. To use modern parameters to confirm the diagnosis and prognosis of the disease.

வைப்பு முறை:

சமுத்திர நீர் , நூறுபடியைப் (200லி) புதுச் சட்டியில் விட்டுக் காய்ச்சி உப்பெடுத்து, இவ்வுப்பில் நூறு பலம் அடிகனத்திருக்கும் சட்டியிலிட்டு, கரும்பாலை அடுப்பின் மீது வைத்துக் காடாக்கினியாய் எரிக்க , உப்பு உருகும் . அச்சமயத்தில் வெடியுப்பு 5 பலம், சீனாக்காரம் 5 பலம் , பூநீறு 3 பலம் இவைகளைப் பொடித்துத் தூவி ஒன்றுபட உருகிக் குளிரவிட்டு எடுக்க கட்டும், உடைத்துப் பார்க்கில் வைரம் போலிருக்கும்.

சுத்தி:

இதனை காடியில் மூன்று நாள் ஊறப்போட்டு , சூரியனொளியில் உலர்த்தி எடுக்க சுத்தியாகும்.

செய்கை:

மலகாரி , அகட்டு வாயுவகற்றி , சிறுநீர்பெருக்கி , பசித்தீத்தூண்டி

பொதுக்குணம்:

“அட்டகுன்ம மந்தம் அசிர்க்கரஞ்சூர் சீபித்தந்
துட்டவையம் நாடிப்புண் டோடங்கள் - கெட்டமலக்
கட்டுவிட விந்தையக காமியநோய் வன்கரப்பான்
விட்டுவிட விந்துப்பை விள்”

பொருள்:

இந்துப்பினால் எண்வித குன்மம் , அலசம் , அசிர்க்கரம் , கபபித்தம், கபாதிக்கம் , நரம்புகிரந்தி, திரிதோஷம் , மலபந்தம் , விஷம் , சுக்கிலம் , கப உபதம்பம் , கடுவன் ஆகிய நோய்கள், தலை , விழி, நா, தந்த மூலம் தாது, கன்னம், கண்டம் , யோனி இவ்விடத்து நோய்கள்; சந்நியாசம், நேத்திரகாசம், தாகம், சுவாசம், இரத்த மூலம்

முதலிய பிணிகள், தேள், எலி, சிலந்தி இவற்றின் விஷங்கள்; வாதக்கடுப்பு, சூலை முதலியன நீங்கும்.

$$- \hat{I}^{1/2} \hat{A} ; \hat{I}^{1/4} \tilde{O} \quad \frac{3}{4} ; \mathcal{D} \quad f \in \mathring{A} \quad \mathring{A} \hat{I} \hat{O} \hat{O}$$
$$-\hat{A} \hat{S} \hat{A}^\dagger, \tilde{O}:$$

$\mathbb{S}^{\frac{3}{4}}, \mathbb{O}^{\frac{3}{4}} \subset \mathbb{I} \cup \mathbb{I} \cap \mathbb{A}^{\frac{3}{4}}; \emptyset$, $\mathbb{p} \circ \mathbb{D} \circ \mathbb{A} \cap \mathbb{U} \cap \mathbb{S}; \frac{1}{4} \mathbb{A}; \emptyset$. $\mathbb{A} \mathbb{A} \mathbb{C} \mathbb{O}^{\frac{1}{4}} \mathbb{Y} \cap \mathbb{E} \mathbb{A}$
 $\mathbb{A} \mathbb{E} \mathbb{I}, \mathbb{I}, \mathbb{U} \cap \mathbb{I} \cap \mathbb{p}^{\frac{3}{4}} \mathbb{Y}; \mathbb{I}, \mathbb{C} \cap \mathbb{U} \mathbb{E}^{\frac{1}{4}} \mathbb{O} \cap \mathbb{p}^{\frac{1}{4}} \mathbb{A}; \emptyset$. $\mathbb{p}^{\frac{3}{4}} \cap \mathbb{p} \mathbb{C} \mathbb{I} \mathbb{Y}; \mathbb{I} \mathbb{E} \cap \mathbb{A} \mathbb{O} \mathbb{C} \mathbb{E} \mathbb{A} \mathbb{C} \emptyset$
 $\cap \mathbb{A} \mathbb{O} \mathbb{D} \cap \mathbb{A}; \mathbb{O}^{\frac{3}{4}} \mathbb{C} \cap \mathbb{A} \cap \mathbb{n} \mathbb{I} \mathbb{A} \mathbb{n}^{\frac{1}{2}} \cap \mathbb{A} \mathbb{S} \mathbb{A}; \mathbb{C} \mathbb{I}, \mathbb{A}; \emptyset$.

çĀ;Ă;˜Ă, §°;õð, íìì, |,;ð¼ĀøĀç Ā",.ìì 6 ,çĀ;õ Å£¼õ
 ´ýÈçĀñ¼;õ þÊððì 325 Āç.Āçõ ç£÷ Āçõî Ā;¼çĀ;õì ÌÛì,çõ
 Āç"°óð ĀÊ,ðÊ «¼çø §¼, ĀĀð¼çü§,üĀ 8.4 ,çĀ;õ Ó¼ø 21 ,çĀ;õ
 Ā"Ă þóðð"Āì ,Ăì,ç ð|,;ûççø §Ā¼çĀ;îõ. þ¼"Êõ Āçð¼ì,,;Āõ
 ±ýÚ ĀÆìì,çýÈÈ÷.

«ì, ¢É¢Á;ó¼õ, §¿ò¼¢Ã §Ã; ,õ, , ¢Ãó¼¢, ¼;ÃÊõ, ,Ã
 Æ¢ò¼õ, ±Ã¢ Å¢,,õ þ"Å, Ûìì þ"¼ §Å¼¢ììì |, í òð ¿øÃ
 ì¼í | , ;ñ¼¼; , ¼;ì¼÷. |Á;+¢¼£ý „Ã£ô «Å÷, û | °;øÃ¢ôû¢;÷, û

இந்துப்பு சேரும் பிறமருந்துகள்:

- இந்துப்பு சூரணம் :

$\dot{I}\frac{1}{2}\ddot{A};\frac{1}{4}\ddot{O} \frac{3}{4};D f\epsilon\dot{A} \dot{A}\dot{I}\ddot{O}\ddot{O} - 278$

- தேங்காய் ஷாரம்:

$\dot{I}\frac{1}{2}\ddot{A};\frac{1}{4}\ddot{O} \frac{3}{4};D f\epsilon\dot{A} \dot{A}\dot{I}\ddot{O}\ddot{O} - 278$

- சங்கத்திராவகம்:

$\dot{I}\frac{1}{2}\ddot{A};\frac{1}{4}\ddot{O} \frac{3}{4};D f\epsilon\dot{A} \dot{A}\dot{I}\ddot{O}\ddot{O} - 279$

- சாமுதரச் சூரணம் :

$\langle \dot{U}\dot{S}\ddot{A};, \text{ "}\dot{A}\ddot{O}\frac{3}{4}\dot{A} \dot{A}\dot{A}\ddot{O}\dot{A} \ddot{A}, \text{ }^\circ\dot{A}\ddot{O} - 92$

- மாவேலிச் சூரணம்:

$\langle \dot{U}\dot{A}\dot{A} \text{ }^\circ\dot{A}\ddot{O}\frac{3}{4} \text{ "}\dot{A}\ddot{O}\frac{3}{4}\dot{A} \ddot{O} \text{ "}\ddot{E}, \dot{U} - 103$

- சூரண ராசன் சூரணம் :

$\text{ "}, \ddot{O} \text{ "}\ddot{E} \text{ "}\dot{A}\ddot{O}\frac{3}{4}\dot{A} \ddot{O} - 73$

- சமன் சூரணம் :

$\langle \dot{U}\dot{A}\dot{A} \text{ "}\dot{A}\ddot{O}\frac{3}{4}\dot{A} \dot{S}\frac{3}{4}\dot{A} \ddot{A}, \text{ }^\circ\dot{A}\ddot{O} - 212$

- நவ உப்பு மெழுகு :

$\dot{I}\frac{1}{2}\ddot{A};\frac{1}{4}\ddot{O} \frac{3}{4};D \dot{A}\dot{A}\ddot{O}\dot{A} \times - 304$

- சோற்றுப்பாதிச் சூரணம் :

$\langle \dot{U}\dot{S}\ddot{A};, \text{ "}\dot{A}\ddot{O}\frac{3}{4}\dot{A} \text{ }^\circ\dot{A}\ddot{O}\frac{3}{4}\ddot{O} 8\ddot{O} \dot{A};, \ddot{O} - 52$

ROCK SALT

Chemical Aspect

Source:

Found in nature in extensive beds mostly associated with clay and calcium sulphate. To obtain it, holes are dug into these rocks which soon become filled up with salt water. The water is evaporated and the salts are left ready for use.

Characters:

It is found in small white crystalline grains or transparent cubes. It is brownish white externally and white internally. It has a pure saline taste and burns with a yellow flame.

Action:

In small doses it is highly carminative, stomachic and digestive. It promotes the appetite and digestion. In large doses 4 – 8 drachms it is an emetic. Rock salt possesses stronger purgative properties than cream of tartar.

Uses:

It is given in dyspepsia and other abdominal disorders. To rouse digestion weakened by diarrhoea, rock salt yavakshar (alkali - potassium carbons impura) is given in convalescence, when heated it is used to foment painful swollen.

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வெடியுப்பு

வேறுபெயர்கள் :

பொட்டிலுப்பு , இணங்கன் , படைராசன், பூமிகூர்மை, நவச்சாரமித்ரு.

Vernacular Names

Arab	:	Abkar, Clbkir
Persi	:	Shoraha, shore
Hin & Guj	:	Shora
Maharastra	:	Shora – mitra
Telugu	:	Patlu – uppoo
Chitloo	:	Bhusmoo
Tamil	:	Pottil uppu
Mal	:	Veti – uppu
Can	:	Patluppu, Sendur lavana
Kon	:	Sinaur lavana
Sinhi	:	Pothunu
malay	:	Sundawa
Burma	:	Yand zeing

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Organoleptic characters:

சுவை	: கசப்பு
வீரியம்	: வெப்பம்
பிரிவு	: கசப்பு
செய்கை	: சிறுநீர் பெருக்கி, குளிர்ச்சியுண்டாக்கி , வியர்வை பெருக்கி

- 1½Å;¼õ ¾;Ð fεÅ ÅÎôò -

331

குணம்:

“மல்லாரு மட்டகுன்ம மாதருத ரக்கட்டி
கல்லா மதைப்புநீர்க் கட்டருக - லெல்லாமே
கம்பிகம்பி யென்றுங் கருவுண்டா மங்கிநின்ற
கம்பிகம்பி யென்றுரைக்குங் கால்”

எண்வித குன்மம், கருப்பாசயக்கட்டி, சோபை, மூத்திரக்கிரீச்சரம், நீர்ச்சுருக்கு, சூதிகாவாதம், வாதசோணிதம் வாத பித்த கப குன்மங்கள், பெருவயிறு , ஈளை, கபதோடம் இவை ஒழியும். பேரிளம் பெண் பருவங்கடந்த மாதர்க்கு கர்பம் உண்டாகும்.

வைப்பு முறைகள்:

ஒரடி கனத்த மட்பாண்டத்தில் , உப்பு உதிர்ந்த மண்ணைக் கொட்டி நீர் விட்டுக் கலக்கிய பிறகு குருது கட்டி தமரிட்டு , வைக்கோல் சொருகி மேற்படி நீரைவிட்டுத் தெளிவெடுத்து அதனை காய்ச்ச உப்பாகும்.

pù×òò 1 Åîîîî çε÷ ç;ýî Åîî Åçõî ,;õîíõ §À;Ð,
óòÀ¾çüî 1 Åîî Òççò¾ §Á;÷, ÅÆî°;Û pÅü"È Åçõîî ,;õî°ç

⁂|Àîî,×õ. þðÀÊ 4 «øÃÐ 5 Ó"È ,;õî°⁂ ⁂|Àîî, ,õÀ⁂,õÀ⁂À;õ
⁂⁂üîõ. þÐ Å;¼ððîî §Å÷, ,;õ, þ"Å, à §À;ýÈÐ.

⁂À§À; ,õ:

- ⁂⁂"É× ¼îÀ;üÈõ, ¼"ÅÅÀ⁂, þ"Å,Û¼ý ÛÊÀ íÃð¼⁂üîõ
|À;ðÊÕðð 16.8 ,⁂Ã;õ, ⁂Å;î°;Ãõ 16.8 ,⁂Ã;õ þÅü"È 126
Á⁂.À⁂ð ⁂ÉÃ⁂ð ,⁂ðð °É"ÅÀ⁂ð ⁂"Éðð ⁂ÀÀ ⁂ÀÀ
|⁂üÈ⁂À⁂⁂ðîîÀî î½ð"¼î |,;îîîõ.
- íÃð¼⁂ð ,;îõ ⁂; ÅÈð°⁂, ¼;õ, ⁂É÷î,îðð, §¼;ð ÅÈð°⁂
þ"Å,Ûîî, |À;ðÊÕðð 8.4 ,⁂Ã;õ, 280 Á⁂.À⁂ð ,;°⁂À⁂ð
,ÀóÐ, í"Åî,;ð §¼ý «øÃÐ ,ü,ñî ÛðÊ «Êî,Ê «Õó¼À;õ.
þ¼"É «õ"ÀÀ;ð ,;îõ íÃõ, ⁂É÷î§,;⁂Ô¼ý ÛÊÀ íÃõ
þÅüÈ⁂üîõ ÅÆî,À;õ. þ¼"É §Áø§⁂;îî, ,Éú §⁂;îî ⁂,⁂À
þÃð¼ À⁂ð¼ §⁂;À⁂ðð ÅÆî,À;õ. ⁂ÀõÀ |¼;ñ"¼ð ðñ, |⁂îí
Å⁂Ã½õ þ"Å,Ûîîî °⁂È⁂ð |À;ðÊÕðð"À Å;À⁂⁂ðîî í"Åî,À;õ.
- °Ûî ,;⁂¼î,"⁂ð |À;ðÊÕðð ⁂ÉÃ⁂ð °È "Åðð ⁂÷ð¼⁂î íððÊ
|,;Ûð¼⁂ð ð", À⁂Êî,î íÅ;°,;õ þÕÁø ¼¼⁂ðð. þÃñî
îýÈ⁂|À"¼ |À;ðÊÕðð"À ´õ «×ýŠ ⁂ÉÃ⁂ð ,ÀóÐ, ,ñ ÅÀ⁂îî
,⁂§À¼À; ,×õ ⁂À§À; ,⁂î,À;õ.
- 35 ,⁂Ã;õ |ÀÊÔðð"À 336 Á⁂.À⁂ð ⁂ÉÃ⁂⁂ðîî ,ÀóÐ, «¼⁂ð
°É"À"À ⁂"Éðð, ãðî Å⁂î,õ, ãðî ÅÀ⁂ þ"Å,Ûîî §Á§À
§À;ðîîÀî î½À;îõ. þ¼"É «ÊðÀð¼ ,;Àî,Ûîîõ
⁂À§À; ,⁂î,À;õ.

வெடியுப்பு சேர்ந்த மருந்துகள்:

- கந்தக சுடர் தைலம் :

« $\hat{U}_S \hat{A}_j$, " $\hat{A} \partial \frac{1}{4} \phi \hat{A}$ $\hat{A} \in \frac{3}{4} \tilde{O}$ $3 \tilde{O} \hat{A}_j, \tilde{O}$ - 81

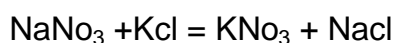
POTASSIUM NITRATE

CHEMICAL ASPECT

Preparation of potassium Nitrate:

1. From chile salt petre:

A mixture of chile salt petre and potassium chloride in Molecular proportions is dissolved in minimum quantity of boiling water.



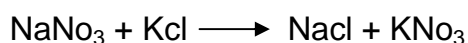
As the solution is kept boiling, water evaporates and more sodium chloride separates out. when enough of sodium chloride has been separated, the solution is cooled to crystallize out potassium nitrate.

2. From Crude Indian Salt petre:

The crude salt is dissolved in water, filtered, and concentrated. When allowed to stand the deposit form crystals of potassium nitrate. These may be further purified by crystallization.

Text book of Inorganic Chemistry 133

Potassium nitrate, also known as nitrite (or) salt petre is manufactured by mixing hot, concentrated solution of sodium nitrate, chile salt petre and pottasium chloride



As sodium chloride is not very soluble in hot water, the bulk of it is precipitated. The hot liquor is separated from the sodium chloride and when allowed to cool, fairly pure potassium nitrate crystallizes out. It can be further purified by recrystallization.

This process may be better understood by comparing figures for the approximate solubilities of the compounds concerned (gram per 100gms of water)

NaNO ₃	85	Very soluble
KCl	34	56
NaCl	36	38
KNO ₃	31	Very soluble

Text book of Pharmaceutical Chemistry - 222

Nitrates are salts derived from nitric acid. They are all acids and all are soluble in water.

Chemistry in today's world - 377.

கல்லுப்பு

வேறு பெயர்கள்:

கடல் குருவி , பாறையுப்பு, அன்ன கூர்மை, அல்லுப்பு , அட்சயம், பிரோத்தம், அனுசுவையாதாரம், வேலைநீர், வெல்லுப்பு, முனிமுத்திரம், சவர்ச்சலம், மிருத்திய ஏகாந்தம், நல்லுப்பு, தற்கால லவணம்.

பொதுகுணம்:

”ஐயமறுஞ் சூலை யாரோசி பித்தஞ் சத்தியொடு
வெய்யபிணி யட்டகுன்மம் விட்டேரும் பெய்வளையே
வாதமதி தாகம் மலக்கட்டும் போமுலகிற்
கோதறு கல்லுப்பைக் கொடு”

பொருள்:

கல்லுப்பால் கபம், குத்தல் , அருசி, பித்தம் , வாந்தி , உஷ்ண வாயு, எண்வித குன்மம், வாதநோய், மலபாதம் இவை நீங்கும்

Ì½À;¼õ ¾;Ð fEÅ ÀçÃçx

கல்லுப்பு வைப்பு:

“காணாகின்ற கருவாலே யூநீராச்சு
கருவாக்க உருவாச்சு
காறுகின்ற கட்டுப்புச் சாரமாச்சு
காறுகின்ற மாதவனை சுத்த சலம் விட்டுக்
கரைந்து வன்னி அடுப்பேற்றி இரவியில் பத்து
கணுகின்ற அதையடுத்துப் பார்திராகில்
கடுங்கார உப்பாச்சு கல்லுப்பாச்சுதே !”

 $\dot{I}^{1/2}\tilde{O} :$

pùĀċĀũ", -òð, ,¼öìîû Á"ĀšĀ;Āì ,ðĒĀ;öð Ā;"ĒĀ;ö ĀÇ÷òð
çċüîð ±ýŮð, ,ðĒĒì; ,ð Ąċċø |Ā;ýšĀ;ø çċýŮ -Ŏ,ċĀ;î|ÁýŮð, ÁüĒ
-òð,"Ç |ÁðĀ |ÁðĀì ,Āċ îĒðð Āċî|ÁýŮı ŮĒðĀðîûċĒ. ÁüŮð ,øðòðì
î½ı,û ²ðĀ", ±ýĀ"¼ôð, ,ðîôĀð¼ -ðĀċý š°ı¼"É þýĒ|¼ýĀ"¼ôð
Āċý,;îð |°òôð,Ç;ø -½ĀĀ;ð.

"À; |ÃŸÈ -òòìì ²òì½ óñî
 À; í, íÉ ÌÈç|ÃòÃ; ò À, Ãì s, Ç; ò
 , í |ÃŸÈ , ÃçÃçø "Àò ÐÒììò sÃ; Ð
 , òÃçÉ; ü s °ÚSÀ; ÕÕ, çø ÅüÈçø
 â |ÃŸÈ Òò¼; , çø |çðÊSÀ; Ä; , çø
 |À; í, çÉ; ø ÅçÃçø¼¼; ü Ì½SÁ; þø "Ã
 - |ÃŸÈ , òììì « "¼Ã; Çó¼; ý
 «Øó¼çSÃ , ÉÁ; , ç ÕÕ, çü s, sÇ
 - Õ, çÉ; ü |À; ýSÀ; sÃ Â; ¼ sÃïò
 - °ò¼çÃ; ÓòÐòSÀ; ÉçÈSÁ; s¼; ìò
 ÀÕ, çü Íñ½; òò sÃ; Ä sÃ¼; ý
 À; ìì |Äü Èç "ÃÖ¼SÉ °çÃòSÀ; , íò
 ¼çÕ, çÉ; ü ", ¼ÉçSÄ ÅÃçÃò sÃ; sÃ
 °çì, íÁ Õ¼çÃ; Äü , ÉSÁ; âïò

ÓÔ,çÉ; |Ä;ÿÛìÌ Á; , ÌÒÒ
 Ó¼üÈÄÁ;í , ÒÊÛ"¼ Ó"ÈÒÄ;§Ä"

சுத்தி :

இதனை காடித் தண்ணீரில் பிசறி பிறகு ஈரத்தைத் துணியில் துடைத்து வெயிலில் உலர்த்தி கொள்ள சுத்தியாகும்.

கல்லுப்பு சேரும் பிறமருந்துகள்:

- கல்லுப்பு பற்பம் :

°Ä§Àó¼çÄ÷ ÄÕÒÐÄ Í¼÷ - 476

- கல்லுப்பு செந்தூரம் :

Ì½Ä;¼õ ¼;Ð f£Ä ÄçÄçx

- சாமுதரச் சூரணம் :

«ÛÄÄ "Äò¼çÄ ÄçÄõÄ Ä, °çÄõ - 92

- சோற்றுப்பாதி சூரணம் :

«ÛÄÄ "Äò¼çÄ çÄ£¼õ 8õ Ä; ,õ - 52

- மாவேலிச் சூரணம் :

«ÛÄÄ °çò¼ "Äò¼çÄ Ó"È,û - 103

- சூரணராசன் சூரணம் :

", Ó"È "Äò¼çÄõ - 73

- «Ученые труды» 2014, № 1, с. 212

- °ç, çî°; Æ Æ ¼ÆÀÕ - 188

- İ½À;¼Õ ¾;Đ f£À ÀçÃçx - 304

SODIUM CHLORIDE

Chemical Aspect

Salt is the name given to the varied natural and industrial forms of Sodium chloride (NaCl_2) with 39.4% Sodium, 60.6% chlorine, but it is often found mixed with small quantities of magnesium, calcium, potassium, components etc.

Salt is very widely distributed and abundant salt acquired as extensive deposit of rock salt as salt solution or brines an efflorescent earthy crust and also as sublimation product near volcanoes of these types. The first two are of commercial importance. Rock salt acquires in sedimentary rocks.

Rock salt is the mineral form of sodium chloride (NaCl_2). Rock salt acquires in crystalline, massive, and granular to compact form. It is a brittle mineral with a concordat fracture and vitreous luster. It is colourless, when it is pure. But often tinged with gray, blue, brown, pink in colour, because of its associated impurities.

Rock salt is found most commonly as deposits in sedimentary rocks, such as sandstone, shale and limestone, often interstratified with other materials such as gypsum anhydrite dolomite etc.,

Formation:

Bedded deposit of Rock salts are formed by the gradual evaporation and altimeter drying up of the isolated lagoons bays in arms of seas partially or wholly by bars or shills.

Distribution:

In India the rock salts are mainly mixed from Himachal pradesh and small amounts from Gujarat.

Properties:

Salt is a soft, water soluble compound having a characteristic salty taste. The smaller quantity perceptible to taste is 68 grains of salt dissolved in a gallon water.

Molecular weight 58.45.

Its cristal humidity is 75.3 % at 20⁰C.

Rock salt is plastic and flows slowly under great pressure . The viscosity of rock salt is 10⁸ poises at 18⁰C and 10¹⁷ at 80⁰ C.

The solubility of salt (Expressed as gm Nacl /100gm, Solvent at 25⁰C) in water is 35.7gm/100gm of water at 0⁰C and 39.89% 100gm of water at 100⁰C.

The salt solution is essentially neutral and dissolution of salt in water is endothermic.

The vapour pressure of standard salt solution is 13.2mm Hg at 20°C 69.5 at 50°C, 75.0 at 70° and 39.6 at 90°C.

Salt is not decomposed by heat, but crystals containing fluids or gases decrepitated at moderately high temperature.

The specific heat is 0.204, Heat of fusion is 123.59 cal gm salt possess a high degree power of staying decomposition in dead organisms the commonest of all preservatives.

Inorganic Chemistry

அப்பளக்காரம்

Gunapadam aspects:

அப்பளக்காரம் என்று அழைக்கப்படும் உழுமண் காரசாரங்களில் ஒன்றாகக் கருதப்படுகிறது.

Vernacular Name:

Sans	:	Sarjikakshara
Eng	:	Washing soda, Crude carbonate of soda
Pers	:	Shikhara, Tine qazur
Arab	:	Tile – miahul – gile.
Hindi	:	Guj Majh and kon.
Duck	:	Courka – namak. Sajjion
Telungu	:	Savite - mannupu Sanchhikaram
Tamil	:	Choonto – munnoo Sanchhikaram

- The Indian Materia Medica - 101

கிடைக்கும் விதம்:

களர்நிலத்தில் விளைகின்ற உவர் மண்ணைச் சேகரித்து நீர் விட்டு நன்றாய் கரைத்து வடிகட்டித் தெளியச் செய்து அத்தெளிந்த நீரை காய்ச்சி குழம்புபக்குவத்திலே தட்டுகளில் ஊற்றி வெயிலில் வைத்து உலர்த்திச் சிறு சிறு பலகைகளாய் சேகரித்தல்.

செய்கை:

வயிற்றுபுளிப்பகற்றி, அகட்டுவாய்அகற்றி, கற்கரைச்சி, சிறுநீர் பெருக்கி

பொதுகுணம்:

“குடல்வாதஞ் சூலை கொடிதான வாதம்
அடல்புரிய மைய மடுக்கும் - நெடுவயிற்றின்
உப்பு சக்தி னோட உயர் குன்ம நோயகற்று
மப்பளகாரமது ”

அப்பளகாரம் வாதக்குடல் விருத்தி , கீல்வீக்கம், மகாவாதம், கபாதிக்கம், வயிற்று
உப்புசம், வாத குன்மம் இவற்றை நீக்கும்.

சுத்தி :

நீர் விட்டு கரைத்து மலினங்களை நீக்கி அடுப்பில் ஏற்றி காய்ச்சி குழம்பு
பக்குவத்தில் இறக்கி வெயிலில் உலர்த்தி எடுத்துக் கொள்ளல்

நிறம் : வெண் பழுப்பு நிறம்

சாம்பல் நிறம்	: உத்தமம்
சிவப்பு நிறம்	: மத்திமம்
பழுப்பு நிறம்	: அதமம்

கண்டறிதல் :

அப்பளகாரத்தை வெதுப்பி சிறிது மஞ்சளில் விட சிவக்கும் காரம் உடையதாக
இருக்கும்.

⁂À§Âᵢ,õ:

2.1 ,çÃᵢõ Ó¼ø 4.2 ,çÃᵢõ «òÀÇì,ᵢÃð"¼ ç£Ãçø ,Äóð
|,ᵢîððÃÃì ìŸÁõ, ÅÂçüÜòð°õ, ,Ãõ, ,£øÅ£ì,õ, Åᵢ¼ §çᵢõ
Ó¼ÄçÂÉ ç£ììõ.

±ÖÁçî°õ ÀÆð"¼ þÃñ¼ᵢì,ç, Åç"¼,"Ç ç£ì,ç, ´Õ Àᵢ¼ç"Â
«òÀÇì,ᵢÃð |ÀᵢÊÂçø «ðð¼ç, «¼"Éì Ý¼, ÅᵢÔÂçÉ;ø ÅÕóðõ
Áᵢ¼÷ìì Áᵢ¼ÅçÃì,õ Åó¼ çᵢû Ó¼ø ãŸÜ çᵢû Å"Ã ,ᵢ"ÃÂçø
Áᵢð¼çÃõ |,ᵢîðð ÅÃ §Åñîõ. þí¹Éõ ÓõÓ"È |°õÂ þð ì½ð"¼ì
|,ᵢîììõ. þ¼É;ø ÁÃî ç£ììõ.

சேரும் பிற மருந்துகள்:

அப்பளகாரப்பம்

«òÀÇì,ᵢÃð 210 ,çÃᵢõ ±îðð, ´Õ ÅÃðÊÂçŸ Á£ð ÅÃòÀçì
|,£ð¼Áç¼ô ÀüÃÃᵢõ. °ᵢõÀ"Ã ç£ì,çò ÀüÃð"¼ì °ᵢì,çÃ"¼Âᵢ,
±îððð |ÀᵢÊððð Àð¼çÃòÀîð¼×õ.

«Ç×:

þ¼"É ⁂À½|Å"¼ Å£ø ±ÖÁçî°õÀÆî°ᵢüÈçø |,ᵢîðð ÅÃ,
À°ç"Â «¼ç,òÀîððð Àçð¼ ÅᵢÔ"Å ç£ììõ.

ପ୍ରତିକ୍ରିୟାରେ ଉତ୍ପାଦିତ ଗ୍ୟାସ୍ କାର୍ବୋନ ଡାଇଅକ୍ସାଇଡ୍ ।

ଉଦାହରଣ:

ପ୍ରତିକ୍ରିୟାରେ ଉତ୍ପାଦିତ ଗ୍ୟାସ୍

ଉଦାହରଣ: $\text{Na}_2\text{CO}_3 + 2\text{HCl} \rightarrow 2\text{NaCl} + \text{H}_2\text{O} + \text{CO}_2$ - 276

SODIUM CARBONATE

Chemical Aspect

Varieties:

There are three varieties of carbonate of soda

These are

1. Sajjikhhar or Barilla

2. Sajjikhhar - Naphul or washing soda (or) soda crystals
3. Bangada - Khara or very impure carbonate of soda

Sources:

The three varieties of carbonate soda are found in the ashes of chenopodiaceous plants. A species of salt growing near the sea. Crude carbonate or sulphate of soda is an alkaline earth found in large quantities where white granite forms the subsoil.

It is generally found in the hot weather as a efflorescent scandy deposit covering large tracts of open country.

Purification:

It is scraped of the surface to about 3 inches deep and then boiled with a little quick lime and made into cubes for in cart lands. Also obtained from kelp or barilla by incinerating sea-weeds. From Dhobies earth by adding quick lime to the earth and boiling repeated with water.

Constituents:

It contains 25 pc of sodium carbonate is obtained by lixiviation and crystallization of barilla. Chemically it consists of carbonate of soda with certain impurities such as organic matter, sulphate of soda, potash etc.,

Characters:

It occurs in porous granular masses of a greyish white colour or as heavy hard pieces with a strong alkaline taste of soda.

Action:

It is an antacid and a diuretic. The properties are generally like those of yavakshara, but inferior to it.

Uses :

- It is useful in dyspepsia with vomiting, diarrhoea and flatulence.
- It is an efficient remedy in urinary disease.
- In bright's disease of the kidney. and in diabetes the habitual use of this salt has marked beneficial effect.
- In rheumatism and gout Sajji Kadya is given internally with benefit. A powder known as Sajji Kadya Churna made up of Sarajikshara and Yavakshara and Pancha Lavana all equal parts powdered and soaked in lemon juice , Juice of pomegranate fruits and dried in the sun, cures dyspepsia with severe pain after meals, ascites and loss of appetite.

The Indian Materia Medica – 101 - 103

MATERIALS AND METHODS

In this dissertation the “Thisaimuga Parpam” was selected as a compound drug study and used in “Azhal Keel Vayu” .

Collection of Drug:

The drugs were collected from the Raw drugs stores at Tirunelveli.

1. Rock Salt Purification:-

Rock salt was soaked in kaadi for 3 days and dried under sun.

By this method it was purified.

2. Appalakaaram Purification:-

A solution of this salt was made with water and the impurities are filtered. This solution was heated to a syrupy consistency and then dried.

3. Purification of Vedyuppu:-

4 parts of water and 1 part of vedyuppu are taken to form a solution. This solution was heated in a low flame till boiling point was reached. At this point add egg white, at the ratio of 4 eggs for 1400gm vedyuppu, dirt floats on the surface.

It was removed with spoon, before the salt solidifies it was drained in another vessel with mouth covered with a piece of cloth. It

was kept in a closed space and the water in it was drained the next day. After draining it was kept under sun. This process was repeated 6 more times.

4. Kalluppu Purification

Kaadi was sprinkled and mixed with kalluppu the moisture was removed by covering with cloth and dried under sun.

PREPARATION:-

Induppu	-	35gm
Vediyuppu	-	35gm
Kalluppu	-	35gm
Appalakaram	-	35gm

All these are rubbed with kozhiavarai juice for 6 hours and made into a ball. It was kept in an earthen pot and the mouth was closed by an earthen plate. The ends were covered with mud soaked cloth. Putam was made with 12 varieties. The prepared medicine was taken when it cools down.

Route of administration : oral.

Dose : 200mg twice a day with hot water after meals.

â. Ĩ. ÐÇ° ç Ĩ, Ó¼ÄçÂ; ÷ ", §ÂÎ - 80

BIO – CHEMICAL ANALYSIS OF THISAIMUGA PARPAM

Preparation of the extract:

100mgs of parpam was weighed accurately placed into a clean beaker and added a few drops of concentrated hydrochloric acid and evaporated it well. After evaporation cooled the content and added a few drops of conc. Nitric acid and evaporated it well. After cooling the content add 20ml of distilled water and dissolved it well. Then it was transferred to 100ml volumetric flask and made up to 100ml with distilled water. Mix well filter it . Then it was taken for analysis

S.NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	<u>TEST FOR CALCIUM</u> 2ml of the above prepared extract was taken in a clean test tube. To this add 2 ml of 4% Ammonium oxalate solution was added.	A white precipitate was formed	Indicated the presence of calcium
2.	<u>TEST FOR SULPHATE:</u> 2ml of the extract was added to 5% barium chloride solution.	A white precipitate was formed	Indicated the presence of sulphate
3.	<u>TEST FOR CHLORIDE</u>	A white	Indicated the

	The extract was treated with silver nitrate solution.	precipitate was formed	presence of chloride
S.NO	EXPERIMENT	OBSERVATION	INFERENCE
4.	<u>TEST FOR CARBONATE</u> The substance was treated with concentrated HCL.	No brisk effervescence was formed	Absence of carbonate
5.	<u>TEST FOR ZINC</u> The extract was added with potassium Ferro cyanide	No white precipitate was formed	Absence of Zinc
6.	<u>TEST FOR IRON-FERRIC</u> The extract was treated with Glacial acetic acid and potassium ferro cyanide.	Blue colour was formed	Indicated the presence of ferric iron
7.	<u>TEST OF IRON</u> <u>FERROUS:</u> The extract was treated with concentrated Nitric acid and ammonium thio cyanate.	Blood red colour was formed	Indicated the presence of ferrous iron
8.	<u>TEST FOR PHOSPHATE</u> The extract was treated with ammonium Molybdate and concentrated nitric acid.	Yellow precipitate was formed	Trace amount of phosphate was present
9.	<u>TEST FOR ALBUMIN</u> The extract was treated with Esbach's reagent.	No Yellow precipitate was formed	Absence of Albumin
10.	<u>TEST FOR TANNIC ACID</u> The extract was treated with ferric chloride.	No blue black precipitate was	Absence of Tannic acid

		formed	
S.NO	EXPERIMENT	OBSERVATION	INFERENCE
11.	<u>TEST FOR UNSATURATION</u> Potassium permanganate solution was added to the extract.	It doesnot get decolourised	Absence of unsaturated compound
12.	<u>TEST FOR REDUCING SUGAR</u> 5ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for 2mts and added 8 – 10 drops of the extract and again boiled it for 2 mts	Colour change occured	Indicated the presence of Reducing sugar
13.	<u>TEST FOR AMINO ACID:</u> One or two drops of the extract was placed on a filter paper and dried it well. After drying, 1% ninhydrin was sprayed over the same and dried it well.	No Violet colour was formed	Absence of Amino acid

PHARMACOLOGICAL STUDIES

Analgesic study of Thisaimuga parpam By Tail Flick method

Introduction:

According to Siddha Medicine the Thisaimuga parpam is indicated in Vatha diseases from this indication, the drug Thisaimuga parpam might posses analgesic activity.

Aim:

To study the analgesic effect of Thisaimuga parpam on albino rats by tail flick method.

MATERIALS AND METHODS:

Preparation of the Test Drug:

200mg of Thisaimuga parpam was suspended in 10ml of Hot water as suspending agent. This 1ml contained 20mg of the test drug.

Equipment : **Hot water bath**

Procedure:

Six male albino rats (weighing 80-100gms) were used in three groups. The animals were allowed free to access food and water until they were brought for the experiment. The animals which showed the positive response to the stimulus with in a given time were selected for the study.

After the selection of animals which were responding to stimulus within 2 seconds, they were divided into 3 groups, each group consisting of 2 rats.

The hot water was maintained at 55°C . The tip of the tail was immersed into the water and the time was noted when the rat flicked the tail.

First group was given the Thisaimuga parpam at a dose of 20mg / 100gm body weight of the animal.

Second group was administered with paracetamol at a dose of 20mg/100gm of body weight. Third group was given 1ml of water and kept as control.

After the drug administration, the reaction time of each rat after ½ an hour : 1 hour and 1 ½ hour were noted in each group. (When a rat fails to flick the tail, it should not be continued beyond 8 seconds to avoid injury and the average was calculated).

The results of control group, standard group and drug treated group were tabulated and compared.

Study of Analgesic effect of using the drugs of Thisaimuga parpam

Serial No	Name of Drugs/Groups	Dose/100gm body weight	Initial reading	After Drug Administration			Mean Difference	Remarks
				½ Hr Average	1 Hr Average	1 ½ Hr Average		
1	Thisaimuga parpam	20mg/1ml	2.5 sec	3.0	3.0	4.0	-	Moderate
2	Paracetamol	20mg/1ml	3.0 sec	4.5	5.0	6.5	-	
3	Water	1ml	2.5 sec	-	-	2.5 sec	-	

Inference: The test drug has got **moderate analgesic action**.

ANTI – INFLAMMATORY STUDIES

ACUTE ANTI – INFLAMMATORY STUDIES

Carrageenin induced Hind paw oedema method

Introduction:

In Siddha texts, Thisaimuga parpam is indicated in the condition of Vatha disease. So the following Pharmacological studies have been done.

Method:

Carrageenin induced Hind Paw Oedema method in albino rats.

Aim:

To evaluate the acute anti-inflammatory effect of Thisaimuga parpam by Carrageenin induced Oedema method in albino rats.

Drug Preparation:

200mg of Thisaimuga parpam was suspended in 10ml of hot water. Hot water was added for dissolving the test drug. This 1ml contains 20mg of the test drug.

Procedure:

Six healthy albino rats of either sex weighing between 80 – 100gm were selected. The volume of each hindpaw was measured by using the mercury plethysmograph.

After the measurement of hind paw of all the rats, they were divided into three groups. Each group containing two rats.

First group was given test drug . Thisaimuga parpam dose of 20mg / 100gm body weight of the animal. The second group was given Ibu brufen 20mg/100gm of body weight and the third group was kept as control by giving distilled water of 1ml / 100gm of body weight.

All the animals were given 0.1ml of 1% (w/v) of carrageenin suspension which was injected subcutaneously in the plantar surface of hind paw of rats.

Three hours after carrageenin injection the hind paw volume was measured, from the differences in the initial and final hind paw volume, the degree of the inflammation was calculated by taking the volume in the untreated control groups as 100%.

The percentage of inflammation of the other group was calculated from the degree of the anti – inflammatory effect of the treated and the test groups were calculated.

**Study of Acute Anti – Inflammatory by hind paw oedema method using Plethysmograph using the drug
of Thisaimuga parpam**

Serial No.	Name of Drugs / Groups	Dose / 100gram body weight	Initial Reading average	Final Reading average	Mean Difference	Percentage Inflammation	Percentage Inhibition	Remarks
1.	Thisaimuga parpam	20mg/1ml	0.5	1.0	0.45	56.25	43.75	Moderate action
2.	Ibu Brufen	20mg/1ml	0.8	0.85	0.05	6.25	93.75	Good
3.	Water	1ml	0.6	1.5	0.80	100.00	-	No

Inference : The test drug has got **moderate action**.

CHRONIC ANTI – INFLAMMATORY EFFECT OF THISAIMUGA PARPAM IN ALBINO RATS BY COTTON PELLETS GRANULOMA METHOD.

Aim:

Chronic anti inflammatory effects of Thisaimuga parpam

Drug Preparation:

200mg of Thisaimuga parpam was suspended in 10ml of hot water.

Hot water was added for dissolving the test drug.

Procedure:

Six healthy albino rats weighing 100 -150 gms were taken and divided into three groups, each groups consisting of two rats.

In this procedure the drug was given daily for 7 days. Before giving the drug cotton pellets each weighing 10mgm were prepared and sterilized in the auto clave for about one hour under 15 Hg atmospheric pressure.

On the day of the experiment, each rat was anaesthetised with ether to implant 10mgm of sterilized cotton pellets subcutaneously in the lower abdomen of each side after making suitable incision and sutured carefully.

The first group of animals were given the test drug, Thisaimuga parpam in a dose of 20mg/100gm of body weight. The second group was given Ibu-brufen at a dose of 20mg / 100gm body weight. Third group was kept as control group by giving distilled water of 1ml /100gm of body weight on the 8th day of the experiment, all the rats were sacrificed and cotton pellets surrounded by granulation tissues were removed and dried in hot air oven at 55⁰C - 60⁰C.

The concordant weight of granuloma for control group and treated group give an estimation of degree of inhibitory activity of test drugs.

**Study of Chronic Anti-Inflammatory effect by Cotton Pellet method using the drugs of
Thisaimuga parpam**

Serial No.	Name of Drugs/Groups	Dose/100 gram body weight	Pellet weight	Pellet weight of the Granuloma of drugs	Mean difference	Percentage inflammation	Percentage inhibition	Remarks
1.	Thisaimuga parpam	20mg/1ml	10mg	135mg	-	54	46	Moderate action
2.	Ibu Brufen	20mg/1ml	10mg	56mg	-	22.4	77.6	Good
3.	Water	1ml	10mg	250mg	-	100	-	No

Inference : The Test drug has got **moderate action**.

ANTI PYRETIC ACTIVITY ON ALBINO RATS

BY

BEWER YEAST METHOD

Aim :

To study the anti pyretic activity of Thisaimuga parpam.

Procedure:

Six albino rats were selected each weighing about 100 – 150gm and divided into 3 groups. 2 rats in each group. All the rats were made hyperthermic by Subcutaneous injection of 12% Suspension of yeast at a dose of 1ml / 100gm of body weight. 10hours later, the first group was given test drug orally at a dose of 20mg / 100gm body weight. Second group was given paracetamol 20mg / 100gm of body weight. The third group was given distill water orally at a dose of 1ml / 100gm of body weight.

The mean rectal temperature for the 3 groups were recorded at 0 hour, 1.30 hours and 4.30 hours after the administration of drugs

The difference between the mean temperature of the control group , the standard group and that of drug group was calculated and tabulated.

Study of Anti pyretic by yeast induced method using the drugs of Thisaimuga parpam

Serial No.	Name of Drugs / Groups	Dose / 100 gram body weight	Initial Temperature in centigrade	After Drug Administration			Remarks	
				1 ½ hour	3.0 hour	4 ½ hour		
1.	Thisaimuga parpam (3 Rats Average)	20mg/1ml	36.5 ⁰ C	36.5	36.5	35.5	Mild	-
2.	Paracetamol	20mg / 1ml	36.5 ⁰ C	35.5	35.0	34.0	Good	-
3.	Water	1ml	36.5 ⁰ C	36.5	37.5	38.5	No	-

Inference: The test drug has got **Mild Action**

CLINICAL ASSESSMENT

Azhal keel vayu is a disease mainly affecting the major weight bearing joints. Normally this is change in the joints at certain age group.

It affects mainly the knee joints, which do a lot of functions like flexion, extension and rotation etc.

In order to assess the efficacy of the drug Thisaimuga parpam for Azhal Keel vayu, was tried clinically on 40 patients of both from the inpatient and out patient department of the Government Siddha Medical college hospital, Palayamkottai.

Patients above age 40 years were selected for clinical trial. Both sexes were selected from out patient and inpatient, out of 40 cases 10 cases were inpatients and 30 were out patients.

Patients with the symptoms of pain, swelling, stiffness, difficulty in walking etc were selected.

Routine investigations were done mainly with radiological findings.

Criteria for case selection:

- Pain
- Age above 40 years
- Swelling
- Measurement done
- Stiffness
- Limitation of movements
- Crepitation of the joints
- Routine investigations
- 'X' ray knee joint for both diagnosis and prognosis
- Signs and symptoms vary in its severity from patients to patient.

Excluding criteria:

Sudden onset of excruciating pain, marked swelling and redness of the big toe.

- Younger age group
- Migrating joint pain
- Evening raise of temperature, Loss of weight.
- Haemorrhagic effusion.

Line of Treatment :

Thisaimuga parpam was administered orally in a dose of 200mg twice a day with hot water after meals for each case for about 20 – 40 days .

Routine investigations were done before and after treatment. Radiological investigation also done before and after treatment. For IP patients, time was noted for walking to a distance of 100 feet, on admission and after treatment.

The duration of treatment varied according to the severity of signs and symptoms.

Medical Advice:

- They were advised to avoid foods like tubers, dhal, curd etc. which would increase the vatha kuttram.
- Advised to take vegetables and easily digestible foods.
- Avoid cold damp climate.
- Obese patients were advised to reduce their weight in order to avoid stress.
- Advise to take rest but prolonged immobilization should be avoided as it leads on the suffering of the point and further incapacitate the patient to walk.

Exercise for Strengthening Muscles around the knee joint:

Simple exercise that promote flexibility and strengthen the muscles around the knee can go long way towards warding off problems. In many cases, these exercise can also help hasten recovery after a knee injury. Weak or tight muscles are an important cause of knee injuries.

Hence, it is advisable to make the time and effort to strengthen the muscle around the knee. However, if one is already suffering from pain in the knee, these exercise should be performed after consulting a doctor. To derive maximum benefit from the following exercise, they should be performed once or twice a day, repeating every exercise five to ten times for each knee.

Thigh Firmer:



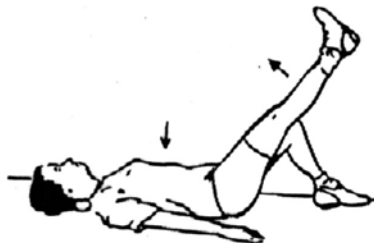
Sit on the edge of a chair with one leg stretched out in front and the heel resting on the floor, tighten the muscle that runs across in front of the knee by flexing the toes back. Simultaneously, push the back of the knee towards the floor and feel the stretch there as well as at the back of the ankle. Hold for 5 seconds. Repeat the same with the other leg.

Knee flexion and extension:



Sit straight on chair and bend the knee by pulling heel under the chair. Rest the foot on the toes. Hold for 5 seconds. Keep the foot relaxed and slowly raise it up to straighten the knee. Hold for 5 seconds and then slowly lower the foot to the floor. Repeat the same with the other leg.

Straight Leg lift:



Lie flat on the back with the stomach pulled in, the knee of one leg bent and the foot flat on the floor. Extend the other leg and lift it slowly as far as is comfortably possible, without bending the knee. Hold for 5 seconds and slowly lower the leg. Repeat the same with the other leg.

Response

Among the 40 patients 85% of patients showed good response of relief in signs and symptoms, 10% showed fair response and 5% showed no response.

TABULATION SHOWING RESPONSE.

Result	No.of.Case	Percentage
Complete relief	34	85
Partial relief	4	10
No relief	2	5
Total	40	100

DISCUSSION

The drug Thisaimuga parpam was taken for the Anti inflammatory and analgesic studies to establish its efficacy in treating Azal Keel Vayu.

The literary collections were collected from various literatures. From these informations, the author has come to an idea about Thisaimuga parpam and its efficacy in Azhal keel vayu.

Bio chemical analysis of this drug was conducted in our biochemistry lab. The drug contains Calcium, Sulphate, chloride, carbonate, Iron (Ferric form, Ferrous form) and trace amount of phosphate.

Pharmacologically this drug showed moderate analgesic, moderate acute anti inflammatory, moderate chronic anti inflammatory and mild anti pyretic actions.

For the purpose of clinical trials, 40 patients suffering from Azhal keel vayu were selected in them 10 were inpatients and 30 were out patients, for them 200mg of Thisaimuga parpam was administered twice daily with hot water. In them 34 (85%) patients obtained good results 4(10%) patients obtained fair results and 2 (5%) patients obtained poor results because of their non co-operation.

The improvement was proved by alleviation of symptoms before and after treatment. During the clinical trial the patients had no adverse effect. Thus Thisaimuga parpam is a very effective and safe drug.

SUMMARY

The drug Thisaimuga parpam was selected for the study to establish anti –inflammatory and analgesic and antipyretic in Azhal keel vayu.

1. To collect informations about the drug, various texts, literatures, journals were analysed, from these information the author has come to an idea about the identification of the drug and the anti inflammatory analgesic, antipyretic activity of the drug.
2. Bio chemical analysis of the drug showed that it contains calcium, sulphate, chloride, carbonate, Iron (ferric form, ferrous form) and trace amount of phosphate.
3. Pharmacological analysis of established that the drug has got moderate analgesic, moderate acute anti inflammatory, moderate chronic anti inflammatory and mild anti pyretic activities.
4. From clinical studies it was inferred that the drug showed good response to 85% of cases and moderate response to 10% of cases. No response to 5% of cases.
5. No adverse reactions were noted during the drug administration.

CONCLUSION

It is concluded that the drug Thisaimuga parpam is an effective remedy for Azhal keel vayu.

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